

TRANSACTIONS OF THE NEW YORK SURGICAL SOCIETY.

Stated Meeting, December 12, 1894.

The President, ROBERT ABBE, M.D., in the Chair.

CHRONIC DISLOCATION OF SHOULDER WITH FRAC- TURE REDUCED BY HOOKS.

DR. CHARLES McBURNEY presented a man who had come under his care, October 25, with subcoracoid dislocation of the right humerus, existing seven weeks. All the signs of dislocation were very well defined. The man was first seen in the out-patient department of Roosevelt, and was sent to the inner department after unsuccessful attempts at reduction under ether. Dr. McBurney then tried reduction under ether and without instruments, but the immobility was excessive, and he was unable to essentially alter the position of the head of the humerus, and rotation could be made to a very limited degree only. The extreme difficulty seemed to be due, as shown later, to fracture of the outer tuberosity and the production of new bone, which struck on the edge of the glenoid cavity with every attempt at rotation. Having made a thorough trial of various methods, he finally used the hooks which he had some months ago shown to the society for reduction of dislocation when reading a paper upon dislocation of the humerus complicated by fracture of the shaft near the head of the bone. In this case the method again succeeded. A small incision was made down to the outer aspect of the shaft about two inches below the head, a hole was bored, the hook was introduced, but sufficient counter-extension on the scapula could not be made with hands or otherwise. Consequently a second hole was drilled, entering the spine of the scapula just at the base of the acromion.

The object of the second hook was to hold the scapula rigid, which it did perfectly. Even then he was unable to effect reduction

with the use of a great deal of force, until the capsule had been freed with the knife and periosteal elevator. Reduction was then complete and easily maintained. The operation having been done on October 25, healing was complete by November 15, since which time passive motion had been made daily. The patient had since been placed under ether once for the purpose of stretching some of the parts. Gradually considerable motion had been obtained, and there was no doubt but that the arm would become very useful.

The cause of limitation of movement was shortening of the ligaments and muscular tissue during the period of inactivity in malposition, and these tissues under the improved conditions would again relax and lengthen. There was no other obstacle to motion, for the joint surfaces were perfectly smooth and unimpaired.

The extent to which fracture had existed could not have been determined except by making undue separation of the soft parts. The diagnosis of fracture was based on the recognition of undue bony prominence, which could be accounted for only in that way.

DR. ARPAD G. GERSTER said he had twice had occasion to make open section of the shoulder-joint for old unreduced dislocation, and, as to the outlook for ultimate mobility, he thought one could safely predict that it was very good. It would be good, even if the patient should neglect to make intentional motion. In the first of his cases the man's occupation led him more or less to the use of alcohol, and for this reason he had neglected to have his shoulder reduced for thirteen weeks. When later reduction was effected with the use of the knife, the patient was urged to keep up motion in order to develop the joint, but he neglected it, and when seen a year and a half later the motion was no greater than in the case shown by Dr. McBurney. Four years later Dr. Gerster met him again accidentally, and, as he was somewhat under the influence of liquor, he took pride in showing on the street what marked control he had regained over his limb. Dr. Gerster was himself much surprised at the marked improvement which had taken place.

The second case was that of a young man who was very docile, and carried out all instructions, even to the application of large cataplasms over the joint for the purpose of hastening absorption of cicatricial deposits, after the method of the so-called bone-setters. In addition, massage and active movements, not passive movements, were employed. Dr. Gerster said he thought passive movements, if resisted by the patient, did harm by causing small haemorrhages and

finally deposit of cicatricial material, besides demoralizing the patient and robbing the surgeon of his intelligent aid which was necessary to rapid success.

Dr. Gerster said, in conclusion, that he believed, in all cases in which the cartilaginous surfaces had not been destroyed and bone deposited, the ultimate result would prove very good indeed. In both his cases there had been band-like adhesions and deposits of tissue which made necessary extensive bloody dissection preceding replacement.

PLASTIC OPERATION FOR PROMINENT EARS.

DR. McBURNEY presented a boy who had been born with complete fissure of hard and soft palate, and with unsightly projection of the ears. He had come of healthy stock. Dr. McBurney had repaired the cleft palate, and in order to improve the lad's appearance had done a plastic operation upon the ears, one which he had often performed in similar cases. The operation was first suggested by Dr. Ely, an artist of this city, who died some years ago. Out of a number of methods tried in different cases by the speaker, this one had proved most satisfactory. He took out a very large piece of integument over the mastoid process, also a large fold off the back of the ear, and a cartilaginous section from the ear, a quarter of an inch in width at the middle and tapering to points, and not involving the inner integument. The cartilaginous defect was closed by deep catgut sutures, the edges of the skin wounds on the back of the ear and over the mastoid process and temporal bone were then accurately stitched together. This procedure at once placed the ears nearly flat against the side of the head. The whole head was then securely bandaged so that no displacement could occur during the healing. Unless cartilage were removed, the improved appearance would last only a few weeks. He thought there were a good many people who would be more presentable if they were to submit to this operation. The one suggested by Dr. Keen had not impressed the speaker as likely to prove satisfactory as the section of cartilage removed in that operation was so very small.

AMPUTATION OF THE ARM FOR CANCER IN A MAN AGED TWENTY-NINE.

DR. R. H. M. DAWBARN presented a man who, although only twenty-nine years of age, had had cancer of the arm for which he

had recently performed amputation at the shoulder. Some years ago he had been so badly burned as to render the right upper extremity practically useless. On the scar over the upper arm an ulcer formed and spread rapidly in spite of all possible care. Four months ago microscopical examination, made at the Polyclinic, showed that the rebellious sore was beyond doubt cancer. Eight weeks ago Dr. Dawbarn amputated at the shoulder and removed all axillary fat and lymph-nodes. Several of the latter were enlarged, and microscopic examination subsequently proved them to be cancerous.

An interesting point in the operation was control of haemorrhage by Wyeth's mattress-needle and a constricting rubber band, one pin instead of two being used. The pin was introduced at the tip of the coracoid process, carried through the capsule of the shoulder-joint, grazing the head of the humerus, and escaping at the rear border near the axillary edge of the scapula. A soft rubber tube was thrown around above the mattress-needle, and made to constrict the underlying tissues and vessels so that haemorrhage was absolutely controlled. Healing subsequently was entirely satisfactory.

Before the operation the man's condition was very miserable. He was white from anaemia, the pulse was scarcely to be recognized, numbering between 150 and 160, and it seemed very doubtful whether he would survive the operation. In order to prevent shock, Dr. Dawbarn resorted to a method which he had practised in major surgical cases for two or three years and with which he had been very much pleased. This was intravenous, hot, saline infusion.

While the patient was still on the operating table, after the amputation was completed, he injected into the median basilic vein nearly two quarts of six-tenths of 1-per-cent. salt solution, as hot as the hand could bear.

The result was remarkable. The patient was removed to bed in better condition than before the operation. The pulse had steadily gone down in frequency and increased in force.

He thought the effect of the injection in preventing shock through the stimulus of the heat was a double one; partly by action upon the muscular tunic of the blood-vessels (and perhaps their sympathetic nerve-centres), causing them to contract, instead of dilating from shock with resultant serious anaemia of brain and heart; and partly by action upon the heart, which contracted more vigorously both because of the bulk of fluid distending its chambers and of the heat.

DR. JOHN A. WYETH said he had used this method for preven-

tion of haemorrhage in amputation at the shoulder in two cases before he had employed it in hip-joint amputation. It had worked beautifully, controlling haemorrhage perfectly.

DR. MCBURNEY thought one might fairly question the correctness of Dr. Dawbarn's theory regarding the *cause* of the benefit derived from the hot saline injection. For his own part, he had great doubt whether it was due to the heat, believing that the temperature was unimportant, provided it was not below that of the body. It was rather the quantity of the fluid injected into the vessels which produced such striking benefit. He had used the method a great deal, and the different ways in which various nurses and attendants had handed him the solution would account for its having been injected at different degrees of temperature, yet the benefit appeared to be about the same for the same quantity. If the temperature were left for him to arrange, he thought he would prefer it always at a high degree, but occasionally it had been handed him lower than he should like, yet full benefit had been obtained. He regarded it as the most valuable resource in modern surgery to overcome the condition induced by loss of blood and shock.

DR. ABBE called attention to the statement by Chiene in the report of the Edinburgh Hospital, last year, that Spence had used the bloodless method in the hospital years ago in hip-joint amputation, employing a single skewer and tourniquet, and stated further that it had also been used on the shoulder and scapula.

DR. DAWBARN rejoined, with regard to the effect of heat upon the heart, that he should never forget a case which he saw, when a medical student, operated upon by the late Dr. Sands, at Roosevelt Hospital. The patient seemed nearly dead, when Dr. Sands laid cloths, wrung out of scalding hot water, upon the praecordial region, which made blisters as large as one's hand, remarking to the observers that there was no means in his judgment as successful in stimulating the heart during collapse upon the operating table as heat applied over the heart; and that the effect could not be entirely due to reflex action, since the patient was under anaesthesia to the surgical degree. Dr. Dawbarn had also heard Dr. McBurney, years ago, refer to the extreme value of heat applied in that way. Now, if this be true, how much greater must be the good effect, if the heat be brought more directly and effectively to the heart, by means of hot saline infusion.

Dr. Dawbarn quite agreed with the other speakers, that the bulk of the fluid injected was the main factor in its value. The amount

commonly recommended in the books was ridiculously small. Quite recently in an article in the *Medical Record* very small injections were advocated "lest the kidneys should be drowned out."

A smaller amount than a quart would seldom be of much use; and in bad cases this should be repeated some hours later, as indicated. It was a bad rule to replace the blood lost at the operation only by an equal amount of salt water. We should not forget the *inward* bleeding from shock,—into the patient's own veins, especially the abdominal,—which fact necessitated more bulk of circulating fluid, to prevent fatal anaemia of brain and heart.

Four years ago the speaker had spent a good part of the winter in making experiments upon dogs, in the matter of bulk and temperature of saline infusion, at the physiological laboratory of Columbia College, by the courtesy of Professor Curtis; and had reported the results of his work, bearing upon this discussion, in a paper read before the Surgical Section of the New York Academy of Medicine. At that meeting he had exhibited a large number of tracings made with the kymograph—a giant sphygmograph—by aid of the mercurial manometer. These showed distinctly the great value of extreme heat in the saline infusion. The dogs could bear considerably greater losses of blood when hot infusion followed bleeding than when merely a blood-temperature fluid was used.

It was interesting to note that in one instance a fatal result was due to injecting simply warm water, devoid of salt. He supposed that Dr. Brockway, who was assisting, had added the usual heaped teaspoonful of table-salt to a quart; and Dr. Brockway supposed that Dr. Dawbarn had done this. As a matter of fact, neither had done so; and the dog died with convulsions quite promptly after receiving this plain water intravenous infusion. Professor Curtis, who was standing by, explained the death by saying that water devoid of salt quickly dissolves the haemoglobin out of the red blood-cells; and that, save in small amounts, this action would be enough to cause death.

Dr. Dawbarn stated that he had been astonished that this fact was ignored in several recent articles upon saline infusion. For example, in the published transactions of the London Obstetrical Society (meeting of December 6, 1893; see *American Gynaecological and Obstetrical Journal*, September, 1894), the paper of the evening and several of the speakers had suggested plain warm water as a good fluid for saline infusion; although none of those present had actually employed it.

As to the best temperature for the injection, Dr. Dawbarn thought it should not be cooler than 120° F., or as hot as the hand can bear. Doubtless the fluid, by dilution in the blood, is much cooler than this by the time it reaches the heart. One need not fear this degree of heat. Indeed, the statement is made in Kirke's "Physiology" that a temperature of 160° F., or nearly 40° F. hotter than the hand can bear, is necessary in order to coagulate any albuminoid ingredient of the body. Therefore, use of a thermometer, other than the hand, is needless. The speaker maintained this heat by placing the vessel containing the salt water in a larger one, which latter contains hot water. The temperature of this outer water-bath is maintained by addition of boiling water as needed. An assistant kept his sterilized fingers in the infusion-fluid continually, to see that it is hot enough.

DR. MCBURNEY remarked that he thought the use of the hand as a guide, as suggested by Dr. Dawbarn, was a good method, which would imply, however, a variable temperature, but one not below that of the blood. As soon as one spoke of degrees it complicated the process, which should be a simple one. Then a thermometer would add a new element of possible sepsis. If he were to name a temperature, he would say from 115° to 120° F., but he would prefer to use as a standard temperature that which the hand could bear comfortably.

DR. WYETH had used the saline solution in a number of cases, and with good results, especially where there had been great haemorrhage. Although he had not used a thermometer, he supposed the fluid was at about 110° F., or about as warm as the hand could comfortably bear. By the time the fluid reached the circulation it would probably be about that of the blood in the viscera, or 107° F.

DR. GERSTER mentioned a case, that of a very anaemic young woman, operated upon at the German Hospital a year ago last summer for ulcerative and cicatricial proctitis. Preceding excision of the rectum colotomy had been made to improve the general condition, and had succeeded somewhat. Owing to the vascular and very brittle state of the tissues, extirpation of the lower part of the rectum proved very difficult and bloody, and it became necessary during the operation to transfuse. The nurse brought in the saline infusion so hot that no hand could bear it, and as he urged the assistant to make haste in cooling it, they surrounded the vessel by ice and salt in a bucket. The result was that when brought to him the fluid was not

only not hot, but decidedly cold. As the urgency was great, there was no time in which to prepare more fluid, consequently he trusted to luck and proceeded with the injection. The patient's condition improved at once, the pulse became stronger, and she survived. Therefore he shared entirely the view expressed by Dr. McBurney, that the benefit was due chiefly to the quantity of liquid injected and the increased arterial tension, although he would not deny for a moment that the temperature was also an important element. The question had also been decided by experiments upon animals, which showed that the quantity of the liquid used exerted the chief influence.

CICATRICIAL STRICTURE OF THE CESOPHAGUS TREATED BY RETROGRADE DILATATION.

DR. GEORGE WOOLSEY read a paper on this subject. (See page 253.)

DR. JOHN A. WYETH wished to place on record a case seen by him four years ago. An Italian woman, four months pregnant, being a bottle-cleaner, swallowed some acid accidentally, and had in the course of two or three weeks complete occlusion of the oesophagus. When she came to him she could not swallow liquids. He performed immediate gastrostomy, and fed her through the opening until her child could be born at term. He failed utterly to pass a bougie from below upward, or even to find the stomach opening of the oesophagus, probably because it was closed by stricture. The woman disappeared from view for a year, and then she was swallowing whatever she cared to eat. There had been no treatment meanwhile. The case showed that by rest following gastrostomy, then beginning to swallow fluids and later solids, the oesophagus could be restored to function.

DR. GERSTER inquired of Dr. Woolsey whether his statistics included a case of impermeable stricture of the oesophagus treated successfully by the retrograde process, not published in periodical literature, but in Dr. Gerster's book.

Receiving a negative reply, he said the case occurred in 1886, in a girl who had become pregnant by lapsus, and tried to commit suicide by drinking carbolic acid. An oesophageal stricture resulted which could not be passed, and, finally, gastrostomy was resorted to to save her from starvation. Through the artificial opening attempts were made daily, for about ten days, to pass a bougie beyond the

stricture, finally with success. Then, by using a string, larger and larger instruments were introduced, until dilatation was sufficient to allow of swallowing. In this case there occurred what Dr. Willy Meyer had observed in a case of cesophagotomy wound,—namely, a tendency to infection. High fever developed, which could be accounted for only by a large subcutaneous abscess of the dorsum, supposed to be metastatic from infection through the oesophagus. She recovered, and was successfully delivered of child.

DR. ABBE thought gastrostomy and closure of the wound at one operation could usually be done. If the parts were handled carefully there would not be the slightest danger of leakage into the peritoneal cavity. The stomach, if not already empty, should be emptied as soon as opened, then stitched to the skin, and all the steps taken without infecting the peritoneum. The opening should be large enough to admit the finger, and to explore the lower end of the oesophagus. He had had three cases in adults in which he was able to readily find the stomach opening of the oesophagus after a little search, and pulling it forward could pass an instrument along-side the finger.

He emphasized the fact that it was safer to dilate the stricture from below with a bougie pulled up by a string than with one which had no guide, since the latter was liable to engage in folds of membrane pushed ahead of it, and make a false passage. He believed that most strictures could be successfully dilated in this manner, and that cutting with a string or by other methods could be thus obviated except in the more dense strictures. He remembered well when, eight or nine years ago, Dr. Sands showed his case of successful internal oesophagotomy by a dilating cutting instrument, somewhat like Otis's urethrotome, and it was considered a great triumph that the patient recovered, so great was the risk of methods of operating at that time. To be able to-day to report twenty-seven successful cases of retrograde dilatation from the stomach was a striking contrast as to safety.

DR. KAMMERER said, with regard to finding the stricture, that in the case of Dr. Gerster, Willy Meyer, and his own, he had made most conscientious efforts to pass through the stricture from the opening in the stomach. The opening was a large one, but the stricture could not be passed, yet on performing external oesophagotomy the instrument entered the stomach readily from the direction of this wound.

WANDERING DERMOID TUMOR.

DR. WYETH presented a tumor with the following history of the case: A week ago a Russian woman, thirty years of age, housewife, entered Mt. Sinai Hospital with symptoms of obstruction, and of peritonitis supposed to be due to appendicitis, the region of the vermiform appendix being the seat of greatest pain. Her symptoms dated back six days. On opening the abdomen over the appendix he found the peritoneum very thick, with evidences of old peritonitis, but no inflammation or adhesion of the appendix. On passing his finger towards the median line it came in contact with a mass adherent to the omentum half-way between the umbilicus and pubes. On detaching it was found to be a dermoid, containing yellow hair and other material. Wandering dermoid seemed to be a rare condition. The patient recovered.

Stated Meeting, December 26, 1894.

The President, ROBERT ABBE, M.D., in the Chair.

RESULT AFTER OPERATION FOR APPENDICITIS.

DR. CHARLES McBURNEY presented a young man to show the result after operation for removal of the appendix by the method described by him last spring. By this method the incisions do not divide any of the muscular or tendinous fibres. The skin incision is made about as it usually is in removal of the appendix, an inch or an inch and a half inside the spine of the ilium in an oblique direction, passing through skin and connective tissue only. The next incision passes through the aponeurosis of the external oblique in such a way as merely to split the fibres of the external oblique, and not divide any of them across. It is very easy to accomplish this division or separation, making a small puncture, and then using the scissors, not as a cutting instrument, but simply as a means of splitting the aponeurosis. The aponeurosis is split a distance of about four inches, the edges of the wound in the aponeurosis are pulled apart with retractors, so as to uncover the surface of the internal oblique, the fibres of which lie at nearly a right angle with the incision made in the external oblique. Then the direction of the incision is changed from the

nearly vertical to nearly transverse, and the fibres of the internal oblique and transversalis are separated from one another, but without division of any of the fibres. They are readily separated with a dull instrument and with the fingers, so as to expose the transversalis fascia. This fascia, with the peritoneum, are then divided in the line of the separation of fibres of internal oblique and transversalis muscles. The entrance is not a large one, but is sufficiently large to allow of the removal of the appendix in nearly all cases operated upon in the interval of repose between attacks, and it is for those cases only that this method of operating is specially recommended. The appendix is now reached and taken out. When the wound is closed the fascia transversalis and peritoneum are stitched with fine catgut very easily, and the fibres of the internal oblique and transversalis muscles fall together in nearly normal position, requiring only a few catgut sutures to make the apposition more perfect, for, owing to the forced separation, the muscular masses show a tendency to fold upward and be loose. The external oblique is stitched from one end of the opening to the other. The skin wound is closed, the subcutaneous space being drained by a small bit of rubber tissue only.

At the time he reported this operation he had employed it upon four or five patients, and since then he had operated upon fourteen or fifteen more, and with most satisfactory good results. All the wounds with one exception have been closed completely without drainage, except that in the skin wound a bit of thin rubber tissue is placed. The healing has usually been very rapid. The patients are so well by the end of from fourteen to eighteen days that he now allows them to get up much earlier than formerly, and, as far as he could see, without disadvantage.

Although the operation may be a little more difficult than the old one, where a large free incision is made through the muscular tissue, yet it has certain advantages. In the first place, the absence of division of the muscular fibre of the transversalis is a very great advantage, and, in his opinion, allows a quite perfect restoration of the strength of the abdominal wall. The absence of haemorrhage is also very noticeable. If care is taken, there is no necessity for having any bleeding points, except, possibly, one in the outer angle of the muscular separation of the deeper muscles, and that can be easily avoided. There is an arterial branch at that point which can be readily recognized when the separation is made. Aside from that, the operation is accompanied by no haemorrhage except from the skin section.

Another advantage is that there is no injury to the nerve-supply of the abdominal wall. The separation of the muscular fibres and the incision do not involve any nerve-fibres at all except those that are conveyed through the skin and subcutaneous connective tissue. The nerve-supply of the internal oblique and transversalis, and the nerve-trunks that run to the rectus muscle, are not touched by any step of the operation. This must have a bearing of some importance on the subsequent strength and symmetrical resistance of the muscular fibres of the two sides of the abdominal wall. If section at right angles to the direction of the muscular fibres of the internal oblique and transversalis is made, very considerable damage is done to important nerves, causing actual paralysis of a considerable portion of the deeper muscles and of the lower portion of the rectus muscle. He had often seen after such incisions, although the wound healed well, relaxation of the abdominal wall on that side as compared with the other. He presumed that such general relaxation is due to the division of the nerve-fibres supplying the muscles.

The patient presented illustrated the result of the new method of operating. The two sides of the abdomen were perfectly symmetrical. There was no weakening or bulging of any part of the abdominal wall. The cicatrix lay in the skin and in the skin only. The scar slid freely over the deeper parts, showing that it was only in the skin. None of the patients operated upon in this manner had worn a bandage or strap of any kind after the operation.

DR. JOSEPH D. BRYANT said he had operated in one case in the manner described by Dr. McBurney, except that the incision through the transversalis fascia was in the direction of the separated fibres of the transversalis muscle. The patient made a good recovery.

DR. L. A. STIMSON wished to add his testimony to the value of the operation. He had employed it, not only during the interval between attacks, but also in some suppurative cases during the attack, and found it not only practicable in some such, but also very useful in reducing the extent of that part of the cicatrix which also extends entirely through the walls. Further, he had employed it in two or three cases of exploration of the abdomen, and had had the satisfaction of knowing that the patients recovered from the operation, not only with their lives, but also apparently with the abdominal walls none the worse for the operation. In two cases he had also employed it in inguinal colotomy, with a view to getting sphincteric action of the muscle upon the protruding end of the intestine. He regarded

the method as a most valuable addition to the surgeon's resources, and thought that Dr. McBurney was too modest in restricting it entirely to non-suppurative cases.

DR. GERSTER wished to put on record two cases of appendicitis in which he had employed the new method. The results had been very good indeed, and it was in accord with reason that they should be, for the operation was logical and well conceived. However, he did not think the operation could be very generally employed, especially where time was of moment. He thought we would, in most cases, still have to adhere to rapid methods of opening the abdomen and to take the chances, which were not great, of subsequent hernia.

DR. WYETH asked Dr. McBurney whether he could stretch and separate the fibres of the transversalis muscle to advantage in his operation. He had never tried it himself, but should suppose it would be difficult on account of their shortness at this plane. Although he had always divided the transversalis and internal oblique, he had always been accustomed simply to separate the fibres of the external oblique.

DR. McBURNEY replied that he had never found any difficulty in separating the fibres of the transversalis and internal oblique, but the procedure was easier the nearer one approached the anterior spine of the ilium. The nearer the rectus muscle the greater the difficulty.

DR. WYETH had no doubt of the great value of the incision, but agreed with Dr. Gerster that there must be many cases in which it would not be advisable to adopt it. It would be of interest to know in what proportion of cases of appendicitis it could be employed, and in what proportion the old incision would have to continue to be made. Since this question had suggested itself to him, the past twelve days he had inquired among his private patients as to the result of old methods of operating, and had obtained answers from nineteen patients operated upon since 1890. In but one had hernia resulted, and in that particular case the patient had declined to carry out the after-treatment, his physician had, without his approval, removed one of the sutures and gone home at the end of three weeks. He was told that he would probably have hernia and that he must relieve Dr. Wyeth of all responsibility for it. Dr. Wyeth was of opinion, then, that the old method of incision, with care to include carefully the several layers in one row of strong silken sutures, gave very good results.

DR. ABBE had employed the method in four cases since it was

first described by Dr. McBurney, and with perfect satisfaction. He had also found it of decided advantage to hold back the skin and external oblique by suture attached to a distant point of the skin, thus avoiding the necessity for using more than a single retractor in order to gain access to the deeper parts. He had understood Dr. McBurney to suggest this in his paper.

DR. MCBURNEY reminded Dr. Gerster and Dr. Wyeth that the class of cases in which he had recommended the operation was that of recurrent appendicitis, the operation to be done during the period of quiescence. There was, therefore, plenty of time for its performance. He had not recommended it in suppurative cases; on the contrary, he advised against its application when pus was present. Regarding uniting edges of muscle cut crosswise, he said it was impossible, no matter how painstaking the operator might be, to bring them together perfectly evenly so that the cut ends of each fibre should be in exact apposition. To accomplish this absolutely, it would be necessary to unite the ends of each divided fibre by separate suture, which was impossible. Where the body of a muscle was divided, all one could do was to insert several sutures and bring the ends together *en masse*. The ends of the individual divided fibres might be near one another, but most of them would, of course, not be in apposition.

TRANSVERSE FRACTURE OF THE PATELLA WITHOUT SEPARATION.

DR. MCBURNEY presented a man who had sustained an unusual form of fracture of the patella, the case being of some interest in connection with the etiology of patella fractures. The patient fell, five weeks before, striking his knee upon the sidewalk, and as he seemed to be unable to walk he was brought to the hospital. On examination it was found he had a transverse fracture of the anterior surface of the patella, but without mobility of any kind between the upper and lower ends of that bone. Dr. McBurney examined him personally the day after the injury. The fracture extended in a transverse direction, and involved the anterior surface only, a groove marking the line of injury from one side to the other. The same condition still exists to-day as at the time of the accident. Of course, recovery was rapid, the treatment being simply for a mild amount of contusion of the soft parts. A furrow of quite appreciable depth can be recognized running from one edge of the bone quite to the other.

No amount of manipulation, even the first day after the injury, caused any change of relation between the two ends of the patella.

Fracture of the patella seldom takes place from direct violence, and when it does so occur the fracture is usually comminuted. A great many of the patients state that the accident occurred from falling upon the knee, but usually they are in error. The fracture takes place from muscular action before the fall, and the latter is the result rather than the causative factor. This case is an exception, the patient having fallen upon the knee, thus causing a transverse fracture of the patella, but not in the ordinary sense.

DR. GERSTER remarked that it was a great pity Dr. McBurney did not see the man before he broke his patella, because then we would be much better able to settle the question whether the patella was broken or not. He could not conceive how a patella can be broken and not be broken completely through, nor how the periosteum could be strong enough to hold the fragments together so firmly that it would be impossible to move one upon the other. He had then a patient in Mt. Sinai Hospital who came in just after an injury. The diagnosis of fracture of the patella was easily made by the mobility of the two fragments. The patient, however, was, and is yet, fully able to lift up the limb by volition; there was no functional disability, and no gap. He was sure that when the case shall have healed nobody would believe the patella had been fractured.

DR. MCBURNEY did not think it difficult to explain this at all. Suppose he held a patella in his hand, well supported on its under surface. If a sharp blow be struck on its anterior surface with a proper instrument, a fracture of the anterior surface can be produced without injuring the posterior wall. The question depends upon the manner in which the patella is supported. The patella breaks when supported in the middle and when sufficient tension is applied at the ends; it would seem that in this case it happened to be supported in the right way, by a considerable surface underneath, and the anterior surface alone broke.

Such he believed to be the explanation of this case, nor did he think it an unreasonable one at all. As to the possibility of it having been a complete fracture, to put it mildly, it is absurd. He saw the patient the day after the injury and the same condition existed as five weeks later. There was a gap in the anterior wall, but no mobility of the patella ends upon one another; the man had complete power of flexion and extension, conditions quite inconsistent with separation of the fragments. The skin was not broken.

DR. BRYANT suggested that, since the notch extended from one side of the patella to the other, it would be necessary to assume that the sharp surface on which the man fell was semilunar in outline?

DR. L. A. STIMSON said he felt a distinct groove along the site of the injury, extending across the patella, and he thought there must have been a complete fracture, produced probably by traction through the ligamentum patellæ acting at an angle to the long axis of the patella while the knee was flexed. He could not understand how a sharp instrument could have produced a depression in the bone without wounding the soft parts. While one might be able to break into the surface of the patella by striking it with a sharp instrument as it lay on the hand, he doubted whether he could do it on the knee without cutting the skin. He was disposed to think there had been complete fracture, but that the two fragments had been held in such firm and close proximity by the tendinous prolongations along the side of the patella as to prevent recognizable mobility. He reminded the society how often opposing opinions had been held by its members as to the presence or absence of mobility in cases exhibited.

DR. GERSTER thought the absurdity lay in basing a diagnosis on insufficient data; that as long as mobility of the fragments had not been proven, and there had been no displacement, it could not be asserted that fracture had occurred.

DR. McBURNEY did not accept the points made by Dr. Stimson at all, because there was no difficulty in making such an examination. There was no more difficulty than in examining a case of fracture of the tibia. In a case of injury to the tibia he knew, after careful examination, whether the bone was broken or was not broken, and it is useless to talk about tendinous or muscular fibres holding the parts together so that fracture cannot be recognized. When an examination of a long bone is made in the proper manner, with increasing force, one can determine positively whether it is fractured or not. If a short bone, as the patella is being examined, and the forces are applied in the right place, making tilting motion, one can ascertain accurately whether two separate fragments exist or not; no fibrous tissue could resist such force as could be applied, so that, if complete fracture were present, one could not detect motion. One examination of that kind is worth all theories that can be raised. Was there ever a case of complete fracture of the patella in which, at the end of five weeks, only such perfect flexion and extension existed as is seen in this patient?

DR. STIMSON rejoined that, of course, one examination as to mobility would be final if our senses were not imperfect. He had seen cases presented at this society in which mobility was tested in different ways, and he had seen the society divided in two camps, one of which was necessarily wrong in supposing that there was or was not mobility.

INTESTINAL OBSTRUCTION AFTER OPERATION FOR APPENDICITIS.

DR. McBURNEY presented a woman, aged forty-six, on whom he had operated for large abscess originating in acute suppurative appendicitis, in June, 1893. No attempt was made to find the appendix. The wound was packed and healed entirely. Eighteen months afterwards she began to suffer from pain in the abdomen, which continued with intermissions and increasing constipation for four months. Three weeks before the last operation she began to have a good deal of pain in the neighborhood of the cicatrix, which had become prominent. When she again entered the hospital it was as a case of intestinal obstruction, with a history of faecal vomiting for a week, a painful tumor over the region of the whole cicatrix, absolute constipation, temperature of 100° F., pulse 106, and very bad general condition. Dr. McBurney found a tumor, nearly as large as a lemon, at the site of the old cicatrix, which was quite tender and had the general feel of a more or less strangulated and positively irreducible hernia. He made an incision nearly in line with the old cicatrix, and soon found that the tumor contained intestine, markedly constricted, nearly black. It took some time to make out the exact anatomy, but after uncovering considerable intestine it became evident that the wall which had hemmed in the peritoneal cavity from the abscess cavity had gradually approached the surface and become everted, bulging out just as peritoneum might protrude in a hernia. At one point a distinct ring had formed in the irregularly-everted mass. Cicatricial tissue had gone before it, intestine had followed, so that an artificial hernial pouch had formed, and the intestinal contents had gradually become constricted.

By cutting away the constricting ring and a number of old adhesions in the neighborhood the strangulation was relieved and the intestine returned. Good healing took place. Dr. McBurney said it was one of a number of cases which illustrated the undesirability of allowing large appendicitis abscesses to form at all.

TRAUMATIC EPILEPSY; TREPHINING; HETEROPLASTY
WITH CELLULOID.

DR. WILLY MEYER presented a man, thirty-five years old, who, in Texas, in 1888, had been struck on the upper part of the left parietal bone by a large piece of wood. He was unconscious for a minute, but afterwards felt well and attended to his work for three days. He then suddenly had a convulsion without loss of consciousness. The entire body trembled, and he afterwards felt very weak. The following day he had a similar attack, and more severe ones within the following four weeks. He therefore went to town and was trephined, evidently with a small trephine, since the bone shown him measured only half an inch in diameter. The doctors told the patient a small blood-clot was removed, but no spicula of bone was found. He was afterwards perfectly well and attended to all kinds of work until June of the present year, a period of over six years. In June, while sitting and talking with a friend, he suddenly jumped up, acted wildly, struck his head against a wall, was held by friends, then became unconscious, and had convulsions for half an hour. Convulsions recurred after that with increasing frequency, and the man was advised by Dr. Jacobi to enter the German Hospital, where he was seen by Dr. Meyer. His look was peculiar, and he was unable to see well with the left eye. He also did not hear as well in the left ear. Under the quiet of the hospital no convulsions occurred. The scar at the seat of the old trephine was very painful to the touch. Dr. Meyer operated on August 9. After reflecting one large flap convex anteriorly, the original trephine opening was found very small. The dura was at once exposed, it being closely adherent to the sharp edge of the bone and bulging out of the hole in the skull. In pushing it very gently down from the edges of the bone it tore at one point, and the brain protruded. With the rongeur forceps a large piece of bone was now removed, freely exposing this portion of the brain. The organ continued to protrude slightly. The dura could not be closed. As it was not practicable to close the gap with a skin-bone flap, Dr. Meyer decided to do heteroplasty with celluloid, after the manner proposed a number of years ago by Fränkel, of Vienna. The only plate obtainable in the city at that time was much thinner than ought to be used. The one used measured three by three and a half inches. It was put directly upon the bone, and was then covered by the periosteum and other tissues of the scalp. Periosteum and skin were

separately stitched with catgut up to the two ends of the incision. Here a small-sized drainage-tube was carried out in order to give exit to the blood which slightly oozed from the exposed brain. To enable proper drainage two narrow slits had been cut into the plate. Through these the tubes passed underneath the plate. The wound healed by primary union. The drainage-tubes were removed on the eighth day at the first change of dressing, and the patient discharged on the fourteenth day after the operation with the wound firmly closed.

At first, after the operation, the pulsation of the brain was transmitted through the plate. Six weeks after healing had taken place it felt perfectly firm and free from pulsation.

The speaker hoped that the operation might in this case have a real curative effect, as the brain, which had been formerly caught in the narrow hole, was now entirely relieved from pressure.

DR. MEYER mentioned a second case of trephining of the skull for a compound fracture in a boy, in which he used a round celluloid plate without employing drainage. The wound, which could not be closed entirely, had healed well by granulation. He thought heteroplasty with celluloid had a bright future, for the rather cheap material could easily be shaped with the scissors and rendered aseptic by boiling.

DR. GERSTER wished to put on record a case presented about a year ago to the Neurological Society, in which he had employed heteroplasty, using, according to Dr. Beach, of Boston, gold plate like that employed by dentists. The first operation had been done for cyst of one hemisphere. Afterwards the patient had epileptic attacks of a local character, and, thinking they might be due to adhesion of the brain to the cicatrix, the wound was reopened, the cicatrix excised, and a gold plate introduced. There was relief for four or five months, but at present the patient was again having attacks.

DR. B. F. CURTIS said that in operating on a case of tubercular tumor of the brain he had placed over the opening in the bone a thin plate of aluminum. Unfortunately recurrence of tubercular inflammation had caused breaking down of the wound, and made it necessary to remove the plate, but he could recommend that metal very highly for this purpose. It was soft and easily malleable. If too thick it could be hammered thinner, and could be cut of proper shape with the scissors. The only precaution to be observed was not to boil it in soda solution, as it was acted upon by alkalies. Possibly

that would be an advantage in using aluminium in some parts of the body, since it was not unlikely that in the course of years it would disappear under the influence of the alkalinity of the serum. The metal was easily obtained, was light, easily worked, and less expensive than gold.

EXOPHTHALMIC GOITRE; EXCISION OF RIGHT THYROID; MARKED IMPROVEMENT.

DR. ARPAD G. GERSTER presented a Russian woman, twenty-four years old, who was delivered of a child eighteen months before. During pregnancy the development of a goitrous swelling was observed, which became very much more pronounced after delivery, when exophthalmos, especially prominent on the right side, was also added to the usual symptoms. A continuous great frequency of the pulse, distressing dyspnoea on slightest exertion, and a steady enlargement finally compelled her to seek relief. Various forms of internal medication proved unavailing, and finally operative treatment was proposed and accepted. On admission, the patient presented a most typical case of the malady. The entire thyroid gland was much enlarged and pulsating, but the right lobe was fully twice as large as the left. Exophthalmos of the right eye, extreme; of the left eye, well developed but not excessive. Pulse varied in accordance with rest or exertion between 122 and 146 beats per minute. After exertion dyspnoea and light cyanosis were apparent. Swallowing unimpeded. Other organs normal. December 3, 1894, under pleasant chloroform anaesthesia, the right lobe of the thyroid gland was removed through a Y-shaped incision, as suggested by Kocher. The superior and inferior thyroid arteries were easily exposed and tied before they were severed, likewise all fibrous connections between the glandular capsule and the surrounding tissues were doubly tied before cutting, hence haemorrhage was very scanty, and though the operation had lasted an hour and fifteen minutes, the patient left the table in an excellent condition.

The operation was much easier than in cases of old goitre where marked changes had taken place in the vessels and surrounding tissues, with adhesions and deposit of calcareous matter, etc. The gland was very vascular, but the vessels were newly enlarged and tolerated surgical handling very well indeed. The intense dyspnoea from which the patient had suffered on slight exertion was to be

accounted for by a secondary lobe of the right thyroid, which was easily turned out from between the vertebral column and cesophagus, and had caused compression of the trachea, especially when anything occurred to increase its vascularity, as, for instance, exertion. There was a well-defined fibrous septum between the right and left lobes, and they were easily separated by blunt dissection. For the sake of experiment he decided to leave the left lobe. Should it become necessary to remove this also, no fear of thyroid cachexia need be entertained, as there is a small detached thyroid lobe extending from the isthmus downward behind the sternum. Thus far, however, the improvement was so marked that no thought of operating again can be entertained. The day after the operation the pulse became somewhat less frequent, and the table of pulses noted down is as follows:

December 5, pulse 106-136.
December 6, pulse 102-116.
December 8, pulse 84-96.
December 9, pulse 78-92.

At this date a diminution of the exophthalmos was noted on both sides. The healing of the wound was by primary adhesion and uneventful, and the progress of the devolvement of the exophthalmos and irritability of the circulation remained steady. On December 22 the patient was discharged with a healed wound, excepting a minute granulating patch at the lower angle where a drainage-tube had been placed.

Altogether, the improvement is very gratifying and prompt, and it is to be wished only that it may also be a lasting one. As the trachea is bared of all soft tegumentary material except the skin, the disfigurement following the operation is considerable, but the patient is well content with the result accomplished.

DR. CURTIS had operated three times for Basedow's disease by removal of one-half of the thyroid. In two of the cases the thyroid was very much enlarged. He had recently seen the first case, over a year after the operation, and the improvement had remained. The eyes were still prominent, but not so prominent as they had been. The pulse had quieted down from 120 to from 80 to 100 without medication. Hysterical and nervous symptoms and insomnia had disappeared. The second case was operated upon last October, and had shown decided improvement, the pulse having quieted and medicine being dispensed with. The patient has gained eighteen pounds in weight.

The third case, which was also operated upon in October, had had an unfortunate and peculiar termination. The patient had a very rapid pulse, was very nervous, but showed no signs of any disease but the goitre. The urine contained no albumen. She reacted fairly well a few hours after the operation, but in less than twenty-four hours the temperature shot up to $103-4^{\circ}$ F., the mental condition became very cloudy, the urine was found loaded with albumen. There were absolutely no signs of sepsis in the wound. She died in forty-eight hours. The rise in temperature and other symptoms could only be ascribed to thyroid poisoning, the symptoms resembling very closely those produced by overdoses of thyroid gland used for myxoedema. Dr. Starr, who had seen the patient, agreed with that opinion. But if the symptoms were due to this cause, why should thyroid poisoning have occurred in this case and not in others? Why should not the greater laceration of the thyroid in removal of thyroid cysts be more likely to cause thyroid absorption and poisoning? While he was unable to answer these questions, he thought the case ought to go on record as pointing to a possible danger of thyroidectomy in these cases. There had not been much haemorrhage in his cases, and the operation had been easier than ordinary extirpation of the thyroid.

TRIGEMINAL NEURALGIA; EXCISION OF INFRA-ORBITAL
NERVE BY LOSSEN'S MODIFICATION OF
LUECKE'S METHOD.

DR. GERSTER presented a woman, thirty-two years old, who had had five children, and had contracted neuralgia of the infra-orbital and mandibular branches of the trigeminal during the first month of her pregnancy, three years before; the speaker discussed the merits of Lossen's method, performed on this patient. Lossen enters the spheno-maxillary fossa from the side of the head after a temporary resection of the zygomatic arch, which is turned *down* in a flap, containing the bone and its masseteric attachments. Interference with the patient's ability to open the jaws is not as great in this as in Luecke's method, where the attachments of the masseter to the zygoma are divided. After exposing the fat which fills the spheno-maxillary space, the operator should follow the posterior surface of the superior maxillary bone until the inferior orbital fissure is exposed. Acini of fat protruding from the sides of the blunt retractor, used to expose the fissure, should be picked away with thumb forceps. The internal

maxillary artery running from below upward and inward will be soon encountered and should be either drawn aside or doubly tied and divided. Behind the artery, but running horizontally from inward somewhat outwardly is the section of the infra-orbital nerve, connecting the round foramen with the external orbital fissure. In the present case, this segment of the nerve alone was excised first, then about one and a half inches of the inframaxillary branch of the trigeminal were also excised from the canal, beginning at the lingula. The operation brought immediate and complete relief. The patient was operated on December 10, 1894, and was discharged cured December 23 with complete anaesthesia corresponding to the nerve-branches that had been excised. The scar is linear and very inconspicuous, but the patient is complaining of not being able to open her mouth to the normal extent. This, however, is improving.

The second case treated according to Lossen's plan concerned a man, sixty-two years old, who was suffering some six months from a most intense tic douloureux of the infra-orbital nerve. Here, as in the previous case, all teeth had been removed from the patient's mouth without avail, and all the usual forms of topical and internal medication were found to be useless. On December 5, at Mt. Sinai Hospital, chloroform being administered, Lossen's operation was performed. To make the removal of the nerve as complete as in Carnochan's operation, its anterior terminations were exposed by raising skin and periosteum from the anterior surface of the superior maxillary bone (to do this Lossen's incision was found sufficient), then the nerve was divided in front of the infra-orbital foramen. After having exposed the trunk of the nerve in the spheno-maxillary fossa, it was secured with a silk ligature, and, being grasped just in front of the foramen rotundum with a stout artery forceps, was, as it were, evulsed from the cranium. Then the whole length of the nerve still contained in the infra-orbital canal was likewise evulsed by twisting around the artery forceps. To facilitate this last step, the orbit could be invaded from the lateral wound, the infra-orbital canal itself opened by chisel and mallet, and thus the nerve removed in one mass. In this, as in the previous case, the wound was united by suture without drainage, and healed by first intention. Relief from neuralgia and complete corresponding anaesthesia ensued. The patient was discharged cured on December 23, 1894.

DR. ABBE said that, according to his experience, Carnochan's operation was preferable to any of the later ones for tic douloureux.

All of the latter done or witnessed by him had left disagreeable restriction of jaw-action or caused greater scarring of the face. By the Carnochan operation he had in four cases removed the entire nerve, and part of it in two others, but was unable in one of the latter to get back to the posterior wall on account of old fracture exostosis.

MELANO-SARCOMA.

DR. ABBE presented photographs and microscopical sections from a case of superficial melanotic sarcoma on the skin of the breast in a woman of twenty. The growth had started on a congenital mole, the size of a pin-head, the year before, increasing rapidly until it had a thickness of one-quarter of an inch in the middle, but at the sides being entirely superficial so that the microscopic appearances were those of an epithelioma rather than of a sarcoma, he believed that some pathologists now claim that all such cases are sarcoma, not epithelioma. The question, however, was still an open one, hence the report upon this specimen, presented by Dr. E. K. Dunham, would prove interesting.

Two other prominent pathologists reported on parts of this very tumor that it was an undoubted epithelioma, but Dr. Dunham's report elucidates this.

"I have examined several sections from this specimen made in the usual way after embedding in celloidin without being able to convince myself as to the exact nature of the growth. I finally concluded to make thinner sections after impregnating with paraffin. These have been much more satisfactory, and I have arrived at the conclusion that the specimen is not an epithelioma, but a melano-sarcoma. The sarcomatous growth is in very close relation to the epithelium of the epidermis, but there is no place in my sections where the epithelium appears to take any part in the composition of the neoplasm. The latter has the usual structure of a melanotic sarcoma; cells of various sizes and shapes, some with and some without pigment granules in the protoplasm, separated from each other by a delicate and variable amount of intercellular substance, showing, in some places, a distinct fibrillation. There are some very deceptive spots in the sections, where it looks as though the pigmented cells extended into the epidermis, apparently indicating that the epithelium is implicated in the growth. Careful examination of these spots has led me to believe that they are places where a papilla containing the sarcoma has been cut so that only a thin layer of it, overlying the neighboring

epithelium of the epidermis, is included in the section. These spots are what made me hesitate when trying to arrive at a diagnosis from the first and thicker sections. I think the specimen has grown from one of the pigmented moles, and that its chief peculiarity lies in the fact that it is so superficial and has spread almost entirely in a lateral direction."

MULTIPLE SARCOMA; GROWTH WITHIN THE LUMEN
OF THE PULMONARY VEIN PROJECTING
INTO THE HEART.

DR. DENNIS presented the heart and some of the attached organs from a case of multiple sarcoma of rapid growth. The point of interest was the fact that the growth involved the lumen of the pulmonary vein and from it had penetrated into the cavity of the heart.

DR. STIMSON remarked that four or five years ago he had seen a case of sarcoma of the suprarenal capsule on the right side which had spread into the vena cava, a part had broken off and caused sudden death by pulmonary embolism.

CYSTIC DEGENERATION OF SUBMAXILLARY GLAND.

DR. WYETH presented a specimen, consisting of the left submaxillary gland, which had undergone cystic degeneration. The tumor had begun sixteen years ago, had steadily increased, had been tapped from time to time; lately it had grown more rapidly and caused complete destruction of the gland by cystic degeneration. The only case of complete destruction which he had seen.